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December 21, 1994

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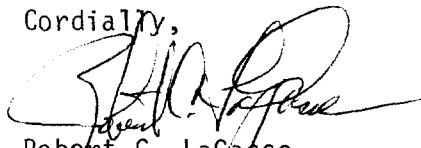
Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Gentlemen:

On December 14, 1994, we submitted comments on ET Docket No. 94-32. Unfortunately, there was a misquote in paragraph 3 of that communication attributing an FCC statement incorrectly to NTIA.

Enclosed is a corrected comment letter we wish to substitute for our original comment letter.

Cordially,



Robert C. LaGasse
Executive Director

RCL/cl

Enclosure

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C O R R E C T E D C O P Y

December 14, 1994

Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Re: Notice of Proposed Rulemaking
ET Docket No 94-32

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Gentlemen:

The International Microwave Power Institute (IMPI) is a non-profit, scientific society of scientists, engineer, technologists and manufacturers involved in the research and application of electromagnetic energy for heating and power generation. As such, we are concerned with the compatibility of microwave ovens and other electromagnetic systems in our society. The Institute will celebrate its 30th anniversary in 1995 with over 1,200 members and subscribers worldwide. IMPI is well known to ISM officials within the FCC and NTIA and has testified at previous hearings on ISM band allocation in the U.S. and WRC.

The Institute is currently working with government and international standards groups to more accurately define the limits for oven noise which are needed to prevent RFI with other services, especially emerging technologies, without adversely affecting the cost or performance (especially efficiency) of microwave ovens. On that point, we have reviewed the report FCC 94-272: Report from the Federal Communications Commission to Ronald H. Brown, Secretary, US Department of Commerce, Regarding the Preliminary Spectrum Reallocation Report, August 9, 1994.

In this report, the FCC reviews preliminary proposals to auction spectrum for private industry use, including the band 2402 - 2417 MHz, which is an ISM band. This report strongly counsels against commercial communications uses of the 2400-2500 MHz band, citing in paragraph 38, the NTIA's assertion that ISM noise is 20 to 40 dB above commercial receiver thresholds at 2425-2475 MHz and 5 to 30 dB above thresholds at 2400-2420 MHz. The FCC goes on to state, "This would make it extremely difficult for any licensed communication system to operate and would reduce advantages of using advanced technologies." In support of the FCC's conclusion, the TIA submitted a study demonstrating that, because of noise created by ISM devices operating at 2400-2500 MHz, implementing a communication system in this band will cost up to 50 times more than a system operating without ISM RFI.

Less than 90 days later, on October 20, 1994, the FCC issued an NPR designated ET Docket 94-32 which proposes to auction the 2402-2417 MHz band to commercial applications stating only that "...the presence of ISM equipment, unlicensed devices (particularly spread spectrum devices authorized under 47 C.F.R. 15.247), and non-Government users present a particularly challenging environment in which to implement new radio services."

The Institute objects to the language in NPR 94-32, paragraph 18, as cited above, representing a deceptive minimalist view of ISM RFI potential at 2402-2417 MHz, especially in the face of report FCC 94-213. Such minimization of the "particularly challenging environment" for commercial communication co-existing with ISM applications is tantamount to "caveat emptor" for auction participants venturing into the 2400-2500 MHz band.

The Institute requests the FCC to explain its change in position relative to the potential threat of oven RFI from August (FCC 94-213) to October (NPR 94-32) of this year. In particular, we request information on the type RFI levels from microwave

ovens the FCC believes is typical in the frequency range of 2402-2417 MHz. IMPI can then compare those levels with our own data. We also would like to determine if the FCC has taken into account the probabilistic nature of such RFI, in that it is time varying, somewhat unreproducible, and sensitive to many operating and design parameters.

Additionally, the Institute expresses its deep concern that future power applications using the 2400-2500 MHz ISM band may be adversely affected by communications technologies. In particular, the future of wireless electric power (microwave) transmission could be critically affected because power transmission involves free-space transmission at higher power levels. This technology offers great promise in solving global needs for energy with the advantage of efficiency and minimum environmental effects. There is already increased interest in Japan and Europe, especially for trans-continental power transmission. In this connection, it is also important to protect the ISM band at 5.8 GHz because of potential advantages for trans-continental transmission.

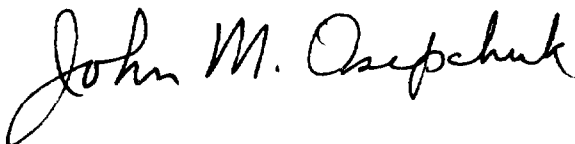
Finally, there are a great variety of other important applications in food processing, ceramics processing, chemical processing, hazardous waste treatment, diamond growing, medical applications, and others that involve very high power, i.e., hundreds of kilowatts. Such applications, which are currently efficient and economic, would be hindered by the need for noise suppression in the ISM band. It should be noted that the economic measure for such systems is not only the value of the equipment but also the much larger value of the materials being processed. A prominent example in the news recently is the new microwave-excited lamps. These products exhibit tremendous advantages in energy efficiency, power conservation, and system cost which could be stunted if commercial communications systems are to operate within the ISM band.

In conclusion, the Institute wishes to stress that ISM band allocations are extremely limited, unlike communications allocations that span most of the radio frequency bands. Even within its narrow limitations, ISM has developed technology that is important to our national manufacturing base and our ability, as a country, to compete in world markets. Future growth of ISM technology has the potential to deliver even greater economic returns through increased manufacturing efficiencies and competitiveness and the enormous potential of energy transmission.

The future of economic growth for ISM should not be endangered by assigning part of the 2400-2500 MHz band to extensive commercial communication uses. IMPI also wishes to stress the importance of recognizing the potential economic burden to communications systems that could be created by over 200 million microwave ovens in existence, today, that emit noise in this band.

Thank you for this opportunity to comment on proposed spectrum auction of the 2402-2417 MHz band. We look forward to receiving the requested information that will allow a more detailed analysis of the proposal. If further information is desired from the Institute, we will be happy to assist you in any way we can.

Sincerely,

A handwritten signature in black ink, reading "John M. Osepchuk". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

John M. Osepchuk
President, IMPI